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The Official Site of the State of Colorado

Colorado.gov

Web Application Payment Processing

Information Manual
Version 1.0

TABLE OF CONTENTS

1   Overview

Colorado.gov produces this informational manual to inform and advise our government partners about processes--both online and offline—we use in unison to process payments, disburse funds, and initiate refunds. Content in this document is meant to be a general, high-level view of our systems and core processes. The following topics are covered:

- Colorado.gov's Payment Engine
- Colorado.gov's Payment Processing
- Colorado.gov's Checkout Application
- Colorado.gov's Refund Process
- Colorado.gov's Security Measures
- Colorado.gov and Partner Working Procedures
- Sample Documentation for Working with Colorado.gov

Colorado.gov is committed to forging and maintaining mutually beneficial relationships with our government partners. Any feedback provided to us is greatly appreciated and welcomed.

2   Introduction to The Payment Engine

The Payment Engine (TPE) is a secure, flexible, electronic payment utility that supports multiple payment types, sales channels, financial processors, and operating platforms. This application not only processes and stores payment information, but includes an administrative facility that allows agency users to report on and research transactions.

2.1   HOW DOES IT WORK?

The following illustration and process description describes how TPE functions:
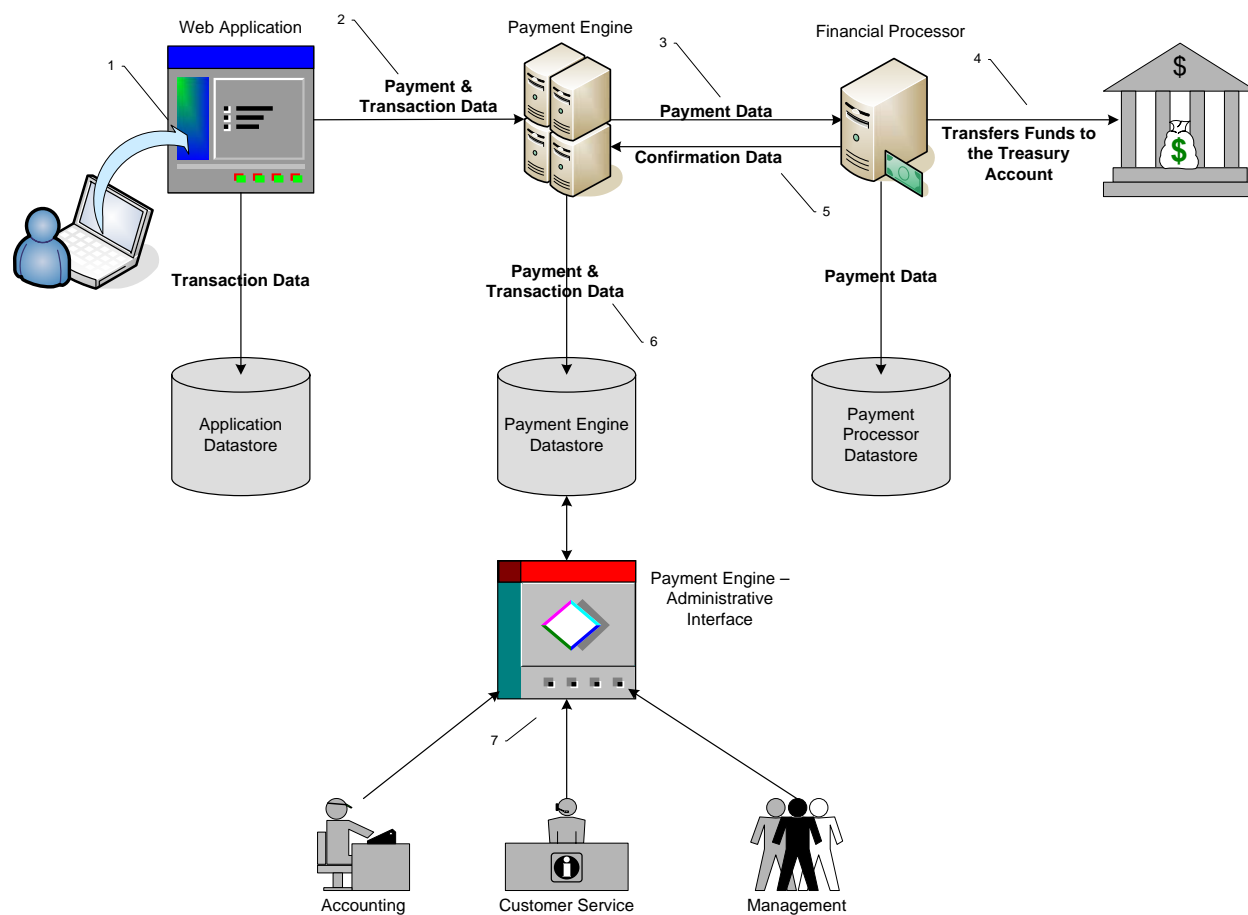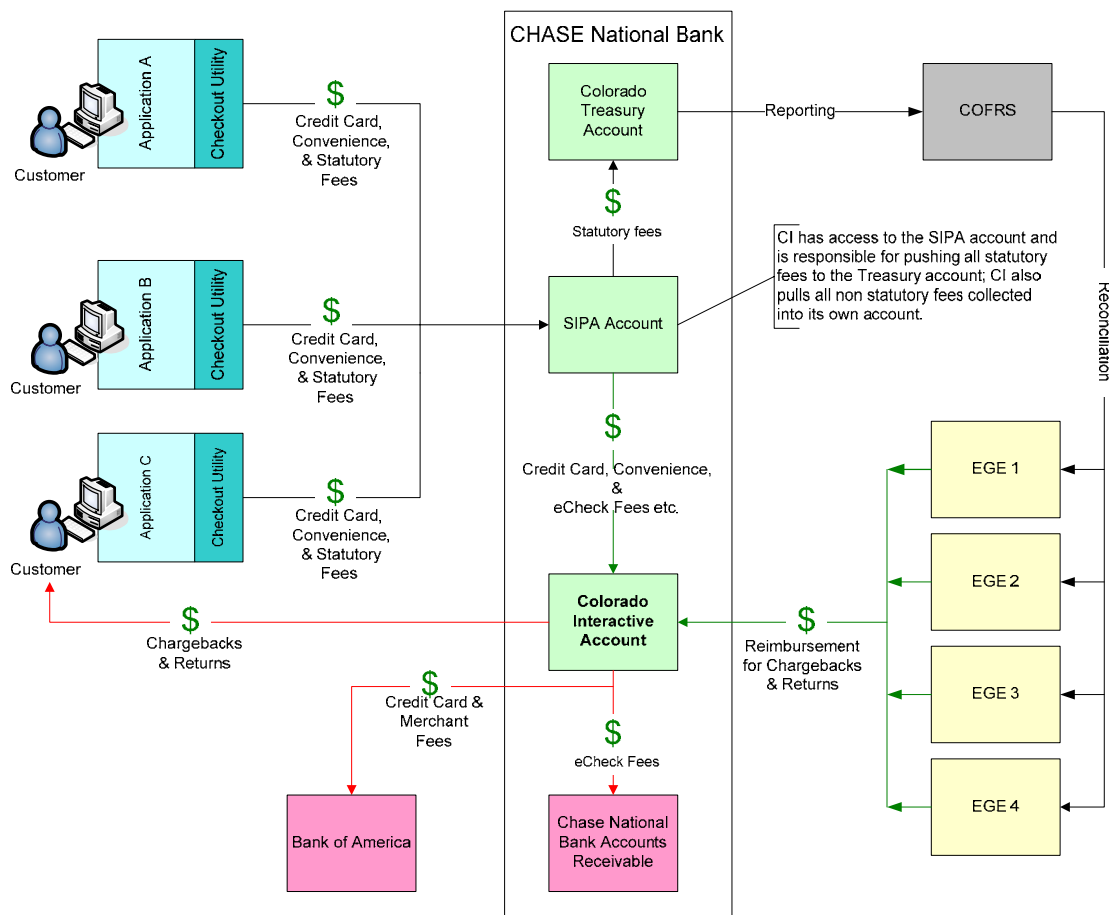

2.2   PROCESS DETAIL

1. The user interacts with the online Web Application entering data for the purchase of a service. The web application stores transaction-specific data in its own database.

2. Payment and transaction-specific data are sent from the Web Application to TPE.

3. TPE sends payment data to a financial processor and requests collection.

4. The Financial Processor authorizes payment, transfers funds to the state treasury account bank account and stores payment data.

5. The Financial Processor returns Payment Confirmation to TPE.

6. TPE stores payment and transaction data and associates data with payment processing results.

7. Agency staff accesses payment and transaction data through TPE's Administrative facility.

3   Introduction to Portal Payment Processing

From an accounting standpoint, the flow of funds from users, through Colorado.gov, and on to the State Treasury is a crucial process that needs to be seamless and standardized. Fees collected online from users need to be tracked, separated, and disbursed to the appropriate accounts. Moreover, refunds and charge backs must be executed in a manner in which Colorado.gov and the EGE work together to disburse the refund and settle their ledgers with each other.

3.1   HOW DOES IT WORK?

3.2   PROCESS DETAIL

1.   A Web Application—in conjunction with the Checkout Utility—charges the user for a service.

2.   Credit Card Fees, Convenience Fees, and Statutory Fees are collected from the customer all get deposited into the SIPA bank account at Chase National Bank.

3.   Colorado.gov moves statutory fees to the State Treasury account at Chase. All fees outside of statutory fees, such as credit card fees, convenience fees, or eCheck fees are directed to the Colorado.gov account.

4.   Colorado.gov pays all credit card, merchant, and eCheck fees out of its own account.

5.   Colorado.gov pays out any return or chargeback that is in order.

6.   The EGE reimburses Colorado.gov through an established process created by the EGE and Colorado.gov.

4   Introduction to the Checkout Application

The Colorado.gov Checkout Application is a plug-in utility that seamlessly integrates with an existing application to receive process, confirm, and authorize registered user, eCheck, and credit card payments. Once installed, the Checkout Application interacts with the existing application, web browser, and payment authorization databases to facilitate an efficient checkout process for end-users and administrators alike. A Checkout Installation tutorial is available for Developers upon request. To receive access to this documentation, an Interface License Agreement must be signed (available upon request).

4.1   HOW DOES IT WORK?

The Checkout Application integrates with an existing application to initiate a seamless checkout experience for the customer.

Web Browser   Main Application   Checkout Application   eCheck, Subscription, or Credit Card Service
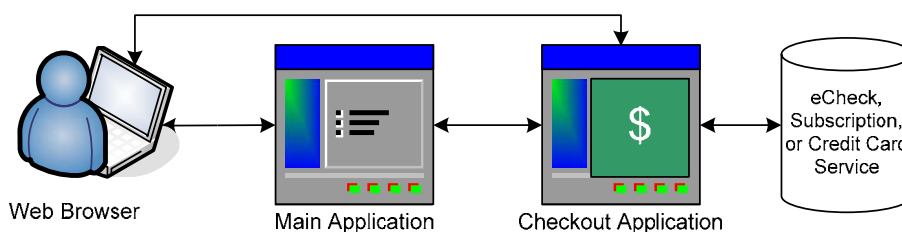
4.2   PROCESS DETAIL

The following process describes the flow of payment transactions driven by the Checkout Application:

1. The user, through a Web Browser, accesses an application and completes transaction data for a service to be purchased.

2. User submits a request for the order and is directed outside the application to the Checkout Application.

    ➢ Note that the Checkout Application's look and feel is designed to mesh with the application itself so that to the user there is no noticeable difference in the interfaces.

3. The application passes transaction information to the Checkout Application.

4. User agrees to incur fees for completing the transaction online. The

5. user is informed that online payment is an alternative to traditional types of payments (such as by phone) and is considered voluntary; the fee is paid to a third party, acting as your agent; and online services are provided to customers of Colorado.gov and thus are not considered revenue for the state of Colorado.

6. User enters payment information, such as credit card number, expiration date and card type.

7. Main Application advances the user to the Query and Billing Disclosure page, allowing them to inspect the breakdown of fees they will be charged.

8. Checkout Application gathers authorization information from one of three databases: Registered User, eCheck, or Credit Card.

9. Checkout Application redirects to the Main Application via the Web Browser.

10. Main Application interacts with Checkout Application to gather Authorization information.

11. Main Application performs any final application-specific processing.

12. Main Application sends receipt information and redirects to the Checkout Application via the Web Browser.

13. Checkout Application sends printable receipt to the Web Browser.

4.3   CHECKOUT APPLICATION USER INTERFACE

The following screens illustrate what steps the user must take to process a payment through the Colorado.gov checkout application.

4.3.1   Step 1 – Enter Payment Method

4.3.2   Step 2 – Enter Relevant Payment Information

4.3.3   Review Information before Finalizing Payment

Query & Billing Disclosure

"Please ensure the information below is correct before proceeding."

Payer Information ?

Boss Nass
1 Gungan St.
Swamp
Otoho Gunga, IN 46205

Phone : 777 - 777 - 7777
Email : bduncan@www.IN.gov   edit

Shipping Information ?

Jar Jar Binks
Gungan Swamp
Otoho Gunga, IN 46205

Phone : 666 - 666 - 6666
Email : bduncan@www.IN.gov   edit

Account Information ?

Routing Number : ******711
Account Number : ****56

Transaction Details

Description	Unit Price	Quantity	Extended Price
Fishing License	$2.00	1	$2.00
Hunting License	$1.00	2	$2.00
Transaction Fee	$1.00	3	$3.00
Total :			**$7.00**

Notes

The Bureau of Motor Vehicles invoice number for this transaction is 12345678

When you pay by electronic check (eCheck), you expressly authorize this merchant, if your check is dishonored or returned for any reason, to collect the amount of the check plus a returned check fee plus any additional fees incurred by the agency, as authorized by Indiana law. The use of an electronic check (eCheck) for payment and agreement to these terms by clicking the "I Agree" button is your acknowledgement and acceptance of this policy and its terms.

Merchant	Amount
Test Merchant	$7.00

The total amount of your electronic check is **$7.00**.

Agree/Continue   Disagree/Exit

4.4   TRANSACTION FEES

The Colorado.gov portal operates under the self-funded model. The self-funded model requires no additional tax dollars or appropriated funds. Under the self-funded model, multiple revenue sources are identified and established to fund Colorado.gov. Colorado.gov remains financially viable by charging approved transaction fees on certain services. The fees are then reinvested in the portal to provide infrastructure and services that enhance the efficiency of Colorado government interaction with citizens and businesses. Services provided through the self-funded model are typically built, maintained, and supported at no cost to the agency. Across other states using the self-funded model, typically 80 percent of all services are provided at no cost to the end user. The end result is a win for both agencies and citizens. Agencies can increase service offerings to their constituents, and citizens can take advantage of the services to make their interaction with Colorado government more efficient and convenient.

The State of Colorado has negotiated low credit card rates for any government office's use, making the cost of processing electronic payments quite reasonable. This gives government offices AND citizens an economical alternative for processing electronic payments for government-related business.

5   Return Policy

Colorado.gov has established a uniform return process. Colorado.gov staff provides customer support and works with EGEs to approve or deny returns.

5.1   HOW DOES IT WORK?

The following process flow details the parties involved in a return incident and the order in which return steps are executed.
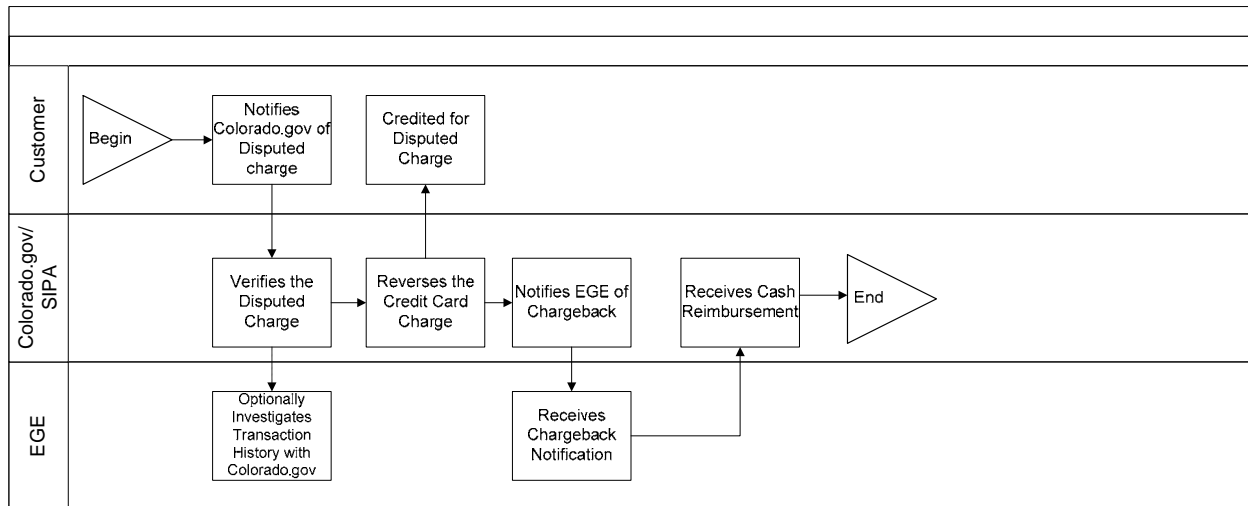
5.2   PROCESS DETAIL

1. A customer requests a refund for a service provided.
2. Colorado.gov verifies the disputed charge and may require transaction research assistance from the EGE.
3. Colorado.gov credits the customers' account.
4. Colorado.gov notifies the EGE that a chargeback has occurred; Colorado.gov provides transaction detail.
5. The EGE reconciles with Colorado.gov by transferring cash into the Colorado.gov account.

6   Security Measures

To ensure security for the state Web portal's Payment Engine, Colorado.gov follows four main security policies:

- Sarbanes-Oxely

- Payment Card Industry Data Security Standards

- State Security Standards

- Internal NIC Policies

6.1   SARBANES-OXELY

Legislation was passed in 2002 to establish corporate accountability for financial transactions. Detailed information can be found at **www.sarbanes-oxley.com**.

6.2   PAYMENT CARD INDUSTRY DATA SECURITY STANDARDS

MasterCard International and Visa developed the Payment Card Industry (PCI) Data Security Standard document in January 2005. The security requirements apply to members, merchants, and service providers that store payment card information. The actual document is available upon request. All major credit card companies have endorsed and adopted this PCI Standard.

6.3   STATE SECURITY STANDARDS

The Information Technology Security Policy details the statewide IT policy. This policy applies to all state agencies, as defined in CRS 24-37.5-102(5). The core policies addressed are: privacy, interoperability, infrastructure, life-cycle management, project management and aggregation. To review this policy in detail, visit **www.colorado.gov/oit/policies.html** and click on "Security Policy".

6.4   INTERNAL NIC POLICIES

NIC is the leading provider of outsourced eGovernment portals. NIC's builds and manages official government Web sites and eGovernment services for 18 states and hundreds of local governments in the United States. With this extensive reach, Colorado.gov is able to use experiences from other portals to modify and adapt security measures. For more information about NIC, visit **www.NICUSA.com.**

6.5   REQUIREMENTS

Table 1 illustrates the PCI standards and how Colorado.gov exceeds those requirements by incorporating Sarbanes-Oxley, state security and internal NIC standards. For more information about PCI security, refer to **www.visa.com/cisp** and **http://sdp.mastercardintl.com.**

TABLE 1 – DATA SECURITY STANDARD REQUIREMENTS APPLIED TO COLORADO.GOV

Objective	PCI Requirement	Colorado.gov's Security
Build and Maintain a Secure Network	1. Install and maintain a firewall configuration to protect data. 2. Do not use vendor-supplied defaults for system passwords and other security parameters.	• Colorado.gov firewall includes deep inspection and intrusion detection and prevention. • Colorado.gov's architecture utilizes N-Tier network and application design; an environment physically separate from test and production; and site-to-site VPNs are prohibited. • Colorado.gov datacenter utilizes the Jumpstart and Solaris Security toolkit to configure and maintain security-hardened systems. • Automated patch management is used on production and development systems. • Vendor supplied packages are used whenever practical. • All other 3rd party packages are compiled from source.
Protect Cardholder Data	1. Protect stored cardholder data 2. Encrypt transmission of cardholder data and sensitive information across public networks.	• Protects stored cardholder data by maintaining strict access control as well as encrypting all sensitive data with a 1024 Bit RSA Cipher. • Encrypts transmission of cardholder data and sensitive information across public networks using 1024 SSL Certificates.
Maintain a Vulnerability Management Program	3. Use and regularly update anti-virus software. 4. Develop and maintain secure systems and applications.	• Colorado.gov uses anti-virus software • When Applications are released, they are scanned with the vulnerability testing tool, Watchfire AppScan.
Implement Strong Access Control Measures	5. Restrict access to data by business need-to-know. 6. Assign a unique ID to each person with computer access. 7. Restrict physical access to cardholder data.	• Colorado.gov has a management and customer authentication domain. Authentication credentials required include a private key and password for management and a password for customers. • Colorado.gov's security regarding workstations includes encryption for laptop home directories, screensaver passwords, and user accounts are not granted administrator privileges.
Regularly Monitor and Test Networks	8. Track and monitor all access to network resources and cardholder data. 9. Regularly test security systems and processes.	• Colorado.gov tracks and monitors all access to network resources and cardholder data and regularly tests security systems and processes. • Logging information is stored on a pair of redundant servers that are isolated from the rest of the network. • On a quarterly basis, a comprehensive network vulnerability scan is performed by Security Metrics. Annually, firewall and password policies are reviewed by a third party.
Maintain an information Security Policy	10. Maintain a policy that addresses information security	• Maintains strict security policies embodying the best practices of NIC portals.

(© Adapted from 2005 MasterCard International Incorporated; Payment Card Industry Data Security Standard, January 2005).

7   Working With Colorado.gov

To work with Colorado.gov, whether it's re-designing a Web site or developing an application, there are only three requirements:

1. Complete Eligible Governmental Entity (EGE) Agreement

An EGE agreement states that your department, agency or political subdivision within the state (including local government) is willing to work with SIPA and Colorado Interactive with respect to the state portal. This intergovernmental agreement was developed in coordination with and satisfies the Attorney General, State Controller and SIPA Legal Counsel. The EGE agreement does not bind your department to working with SIPA, but is a necessary step to begin a project immediately or in the future.

2. Submit Project Request Form

A project request form, detailing information about the proposed application, available department resources and the perceived benefits, must be submitted and approved by Colorado.gov and SIPA. The overall project request process assures each portal project is considered in the same manner and creates effective communication between SIPA, Colorado.gov and EGE's. To review a sample Project Request Form, refer to Appendix A.

3. Negotiate and Sign Work Order

A work order specific to your project will be negotiated so that both parties understand the scope of work, fees involved, or timelines required. To review a sample Work Order, refer to Appendix B.

All forms are available via **www.Colorado.gov/sipa/workingsipa.html**. Once a project is accepted, Colorado.gov and SIPA prioritize and develop projects based upon the Prioritization and Queue Management Process (refer to Appendix C to view the process).

7.1   PROJECT REQUEST PROCESS FLOW
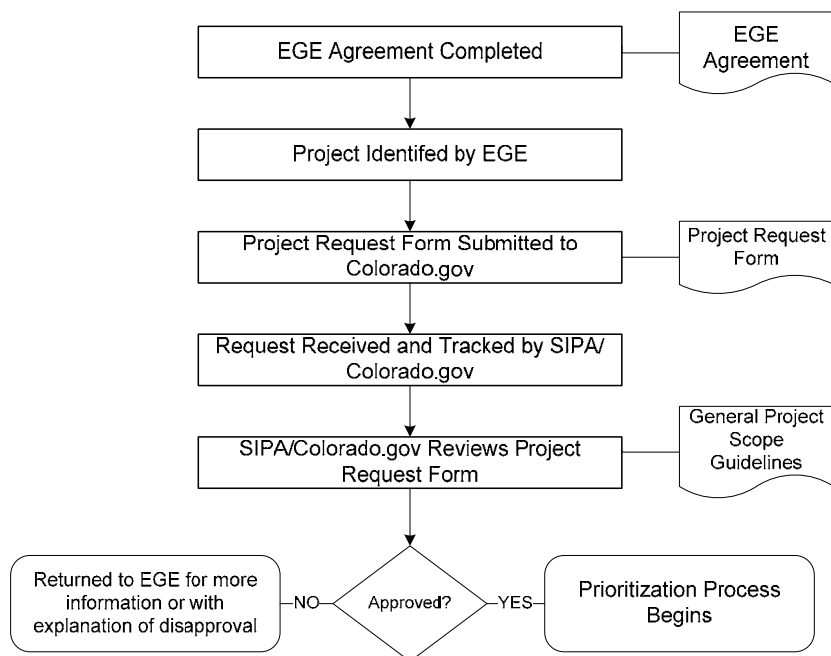
7.2   PROCESS DETAIL

6.   An Eligible Governmental Entity (EGE) Agreement is already completed

7.   An EGE identifies a project suitable for development through the portal

8.   The EGE fills out and submits a Project Request Form with assistance from SIPA/Colorado.gov

9.   SIPA/Colorado.gov reviews the Project Request Form with respect to the General Project Scope Guidelines

10.   The Project Request is approved or disapproved

11.   If Project Request is approved, the Prioritization Process begins.

12.   If the Project Request is disapproved, it will be sent back to the EGE for additional information/clarification or with reasons for disapproval.

8   Conclusion

This manual provides an overview of processing payments through the Colorado.gov Web portal. For more detailed information, please refer to the following contact information.

Contact Information

Please feel free to contact the following Colorado.gov team members for further comments or questions:

John Thomas – Director of eGovernment Services
303.534.3468 x 102

Rich Olsen – General Manager, Colorado.gov
303.534.3468 x 101

9   Appendix A - Sample Project Request

Below is a sample three-page Project Request form.

Project Request Form

Request #:

Request taken by

_____

Date

_____

Requestor

_____

Title

_____

Department   **EGE Present?**

_____   _____

Division

_____

Project Name

_____

Project Type   Read   Read/Write   E-commerce   Website

Application short description:

_____

Requested timeline (When do you need this project completed? Is there a mandated date?)

Department's Portal Project Priority:	1	2	3	4	5
	Behind all existing projects	_____	_____	_____	Above all other projects

Department resources available?	1	2	3	4	5
	Availability Pending				Available Immediately

How to self assess:

Consider these, and other important factors:

- Personnel - Do you have the required number of persons and time available to dedicate to the project?

- Systems - Are changes necessary: is additional hardware, software required.

Examples:

- The agency planned for the project during their budget cycle and allotted both program and technical staff to the project in their work plan - this would rank 5

- Access to program staff is abundant and the project is a high priority for them, however, access to technical staff is very limited - this would rank 3

- Program staff is not available and staff augmentation with contractors is necessary to complete the project – this would rank 1

Please note:

Colorado.gov will attempt to work within your time frame, but due to the nature of the project development queue, desired timelines can not be guaranteed. Please note any concerns you may have about outlying resource availability.

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**Application detailed
description**

**Department back end
description**

Perceived department/customer benefit

Security concerns

Status: **Date:**

Notes:

10 Appendix B – Sample Work Order

Below is a sample three-page Work Order.

<<Project Name>> Work Order

Tacking Number: <<Agency Acronym-XXX>>

Date: Month dd, yyyy

Department:	<<Department Name>>
Division:	<<Division Name>>
Project Name:	<<???>>
Description of Work:	<<Description>>
Project Impact on Infrastructure:	<< Specific Description of expected impact to agency and portal infrastructure>>
Security:	<< Specific Description of expected security issues to agency and portal systems>>
Service Deliverables:	<<Line Item list of deliverables>>
Software Deliverables:	The website will be delivered to SIPA for hosting and maintenance on portal servers.
Hardware Deliverables:	<<Line Item list of deliverables>>
Other Deliverables:	<<Line Item list of deliverables>>
Development Schedule:	**Data Gathering & Prototyping:** Approximately <<XX>> weeks The work order will be approved by the department and SIPA. **Development Planning & Coding:** Approximately <<XX>> weeks **Testing:** Approximately <<XX>> weeks **Implementation:** Approximately <<XX>> weeks: this will include a press release and possible press event.

	During the development process, it is common for unforeseen delays to occur. Colorado.gov will notify the department and SIPA immediately of any changes in projected dates. <<Agency Acronym>> will notify Colorado.gov and SIPA of any changes in their ability to assist in this project.
Statutory Fee Collected on behalf of <<Agency Acronym>>:	<<fee amounts>>
Remittance Provisions:	<<typically: "When funds for transactions are settled.">>
Fee Collected on Behalf of Portal:	<<fee amounts>>
Colorado.gov Project Manager:	John E. Thomas Director of E-Government Services 303.534.3468 x102 jthomas@www.colorado.gov
<<Agency Acronym>> Project Manager:	<<Department/Agency Project Manager Information>>
Customer Support (Help Desk):	Colorado.gov will provide customer support for this service through the help desk for the State's E-Government services. Colorado.gov will pass issues and policy questions beyond the scope of the service to <<name of department project manager>>.
Additional Terms:	<<This section may contain any mutually agreed to caveats associated with the project, such as those listed below..>> Colorado.gov agrees (and is contractually bound) to follow all confidentiality requirements set by <<Agency Acronym>>. Colorado.gov will not charge <<Agency Acronym>> for development, maintenance or customer support of this service. Colorado.gov will be responsible for the maintenance of the delivered code. The code will reside on the SIPA infrastructure housed at 690 Kipling in the state's data center. Colorado.gov will follow the Business Process Model described in the Colorado.gov Business Plan in order to facilitate the delivery of this project. <<Agency Acronym>> must give Colorado.gov a reasonable amount of time to update and support this service when changes are made or requested. This Appendix is a supplement to, and subject to the terms and conditions of, the Eligible Government Entity Agreement between the State Internet Portal Authority (SIPA) and <<Agency Acronym>>. This service is being developed as an enhancement to the State's portal known as Colorado.gov. All promotion of this service will be

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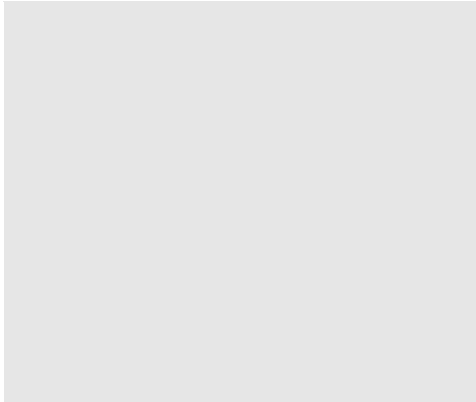
done using Colorado.gov as the access point. <<Agency Acronym>> will work in coordination with SIPA and Colorado.gov on press releases, events, and promotions of this service.

<<Agency Acronym>> acknowledges that Colorado.gov exercises no censorship or control over content furnished by <<Agency Acronym>> to Colorado.gov for this website; that this website will be built by Colorado.gov in accordance with the direction from and with the purpose to achieve the functionality requested by, <<Agency Acronym>>; and that <<Agency Acronym>> will be required to sign a statement that the website has achieved such purposes as built, before Colorado.gov deploys the website on the State's portal.

Gregg Rippy, Executive Director   Date
Statewide Internet Portal Authority

<<Department Signer, Title>>   Date
<<Department Name>>

Rich Olsen, General Manager   Date
Colorado.gov

11 Appendix C – Prioritization & Queue Management Process

The following diagram details how projects are prioritized and managed.

Prioritization and Queue Management Process Flow